

Official

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LISTING OF CLAIMS:

Claim 17 (previously amended): An image processing device for situating objects in virtual space by a computer system, developing a game while controlling the movements of said objects according to input control and set rules, and displaying circumstances in said virtual space as the screen seen from a virtual camera, wherein said image processing device comprises:

polygons forming lines situated along a reference plane serving as the reference in said virtual space such that the reference plane and the polygons have a predetermined, fixed relationship to one another;

determination means for determining the positional relationship between said polygons and said virtual camera; and

polygon tilting means for tilting said polygons, according to the results of the determination, so as to increase the surface area of said polygons seen from said virtual camera to improve the visibility of the polygons from the virtual camera; wherein

said polygon tilting means only tilts said polygons when the polygons forming lines are at least a predetermined distance away from the virtual camera.

Claim 18 (original): The image processing device according to Claim 17, wherein said reference plane is the ground, and said polygons are polygons forming lines situated on said ground.

Claim 19 (original): The image processing device according to Claim 17, wherein said polygons are quadrilateral, and said polygon tilting means modifies the coordinate values of the vertices on one of the sides of mutually facing sides of said polygons.

Claim 20 (currently amended): An image processing device for situating objects in virtual space formed by a computer system, developing a game while controlling the movement of said objects according to input control and set rules, and displaying circumstances in said virtual space as the screen seen from a virtual camera, wherein said image processing device comprises:

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determination means for determining whether or not said objects are in a specific predetermined area in said virtual space; and

camera angle adjusting means for adjusting the angle of said virtual camera based on the results of the determination by said determination means; wherein

the angle of the virtual camera is 0 degrees when said object is not in said specific-predetermined area, and the angle of the virtual camera is adjusted by the camera angle adjusting means to a value other than 0 degrees when said object is in said specific-predetermined area.

Claim 21 (original): The image processing device according to Claim 20, wherein said camera angle adjusting means adjusts the angle of said virtual camera based on the results of said determination and the direction in which said objects are moving.

Claim 22 (original): The image processing device according to claim 21 or 22, wherein said camera angle adjusting means adjusts the angle of said virtual camera in at least one of either the lateral and vertical directions in said virtual space.

Claim 24 (previously amended): An image processing device having an image generating display means for converting virtual space constructed with a three-dimensional model including a plurality of polygons to two-dimensional images seen from a virtual camera in any position, and displaying them on a display device, wherein said image processing device comprises:

angle computing means for computing the angle between an eye direction vector showing the direction in which said virtual camera is facing and a normal line vector showing the orientation of the plane of certain polygons situated in said virtual space; and

polygon tilting means for changing the coordinate values of the vertices of said polygons, so that the angle computed by said angle computing means assumes a desired value, such that the visibility of the polygons from the virtual camera is improved; wherein

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the shape of an object formed by the polygons is modified such that the visible area thereof is increased.

Claim 26 (previously amended): Data recording media including a program to enable a computer system to function as an image processing device according to any of Claims 17 through 24.

Claim 27 (previously amended): An image processing device for displaying circumstances in virtual three-dimensional space in the form of images seen from a camera, wherein said image processing device comprises:

polygons forming lines situated along a reference plane serving as a reference in said virtual three-dimensional space such that the reference plane and the polygons have a predetermined, fixed relationship to one another;

determination means for determining the positional relationship between said polygons and said virtual camera; and

polygon tilting means for tilting said polygons, according to the results of the determination by said determination means, so as to increase the surface area of said polygons seen from the virtual camera to improve the visibility of the polygons from the virtual camera; wherein

said polygon tilting means only tilts said polygons when the polygons forming lines are at least a predetermined distance away from the virtual camera.

Claim 28 (previously amended): An image processing device for displaying circumstances in virtual three-dimensional space in the form of images seen from a virtual camera, wherein said image processing device comprises:

polygons forming lines situated along a reference plane serving as a reference in said virtual three-dimensional space such that the reference plane and the polygons have a predetermined, fixed relationship to one another;

determination means for determining the positional relationship between said polygons and said virtual camera; and

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polygon tilting means for tilting said polygons, according to the results of the determination by said determination means, so as to allow the vertices in the interior, relative to said virtual camera, of said polygons to stand out from said reference plane, while centered on the vertices in the front, relative to said virtual camera, of said polygons; wherein

said polygon tilting means only tilts said polygons when the polygons forming lines are at least a predetermined distance away from the virtual camera.

Claim 29 (original): A game machine, characterized by comprising an image processing device according to Claim 27 or 28, for executing a game by situating objects in said virtual three-dimensional space and by controlling said objects according to player input control and set rules.

Claim 30 (previously amended): The game device according to Claim 29, characterized in that said game is a game in which objects are situated in a game field formed on a reference plane, and said polygons are polygons forming lines [described on] designating boundaries of said game field.

Claim 31 (previously amended): An image processing device for displaying circumstances in virtual three-dimensional space in the form of images seen from a virtual camera, wherein said image processing device comprises:

polygons forming lines situated in said virtual three-dimensional space;
determination means for determining the positional relationship between said polygons and said virtual camera; and

polygon tilting means for tilting said polygons, according to the results determined by said determination means, so as to increase the surface area of said polygons as seen from the virtual camera to improve the visibility of said polygons; wherein

said polygon tilting means only tilts said polygons when the polygons forming lines are at least a predetermined distance away from the virtual camera.

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Claim 32 (original): The image processing device according to Claim 27, 28 or 31, characterized in that said polygons are polygons that show lines.

Claim 33 (original): A game device, characterized by comprising an image processing device according to Claim 31, for executing a game by situating objects in said virtual three-dimensional space and by controlling said objects according to player input control and set rules.

Claim 34 (original): The game device according to Claim 33, characterized in that said game is a game in which objects are situated on a plane, and said polygons are polygons forming lines described on said plane.

Claim 35 (currently amended): A game device for situating objects in virtual space formed in a computer system, developing a game while controlling the movements of said objects according to input control and set rules, and displaying circumstances in said virtual space on a screen as seen from a virtual camera, said game device comprising:

polygons forming boundary lines of a game field situated along a reference plane serving as a reference in a virtual space such that the reference plane and the polygons have a predetermined, fixed relationship to one another; and

a position changing means for changing positions of said polygons to enlarge an area of said polygons according to the angle relationship between said virtual camera and said polygons, such that the visibility of the polygons from the virtual camera is improved.